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AUTHOR Noeth, Richard J.; Prediger, Dale J.
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ABSTRACT

The purpose of this paper was to examine trends in major components of career development across grades 8 to 12. A set of 11 scales was used to assess various components of career development. Both cognitive and behavioral components of career development were assessed. Longitudinal data from four high schools were analyzed in conjunction with cross-sectional data from three nationally representative samples. The study design controlled for the effects of systematic career guidance programs, career education programs, and related interventions on the normal rate of career development. Four high schools representing various geographic locations and community sizes were involved in the longitudinal phase of the study. All schools administered the Assessment of Career Development to ninth graders in the spring of 1973. These students were retested at a one-year and/or three-year interval. The study results appear to have important implications for practicing counselors. Although career-related knowledge and involvement both exhibit growth during the adolescent years, the data indicate that they are relatively independent components of career development. So counselors need to emphasize both knowledge and behavioral aspects in their day-to-day individual and programmatic efforts to improve upon students' normal, minimal career development growth. (Author)

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Career Development Over the High School Years

Richard J. Noeth

Executive Director

Washington Pre-College Testing Program

Seattle, Washington 98105

Dale J. Prediger

Director

Program Support Services

The American College Testing Program

Iowa City, Iowa 52240

BEST COPY AVAILABLE

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D.J. Prediger

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Career Development Over the High School Years

It seems realistic to expect level of career development to increase systematically with age over the high school years. Studies of various aspects of career development have supported this expectation. For example, Jordaan (1974) reported that, from grades 9 to 12, boys in the Career Pattern Study became more aware of the significant characteristics of occupations, obtained more information about occupations which interest them, and developed more specific plans for obtaining further education, job training, and on-the-job experience. Jepsen (1975) showed that students in the 12th grade had more complex information search strategies and more elaborate rationales supporting these occupational choices than they had in 9th grade. Cribbons and Lohnes (1968) reported growth from grades 8 to 10 in various aspects of readiness for vocational planning. Ansell and Hansen (1971) found similar results across grades 8 through 12 in a cross-sectional study of lower- and middle-class high school boys.

Two longitudinal studies of career-related attitudes have been reported recently. Crites (1975) found changes across grades 7 through 12 while Herr and Enderlein (1976) report similar results across grades 9 through 12. In a cross-sectional study of various knowledge components of career development, Westbrook and Parry-Hill (1973) found increases for each grade across grades 6 to 9. Thus, the evidence that various aspects of career development do, indeed, develop over the early adolescent years is substantial.

The purpose of this study was to examine trends in major components of career development across grades 8 to 12. Although similar in general objectives to the studies cited above, this study has several unique characteristics. First, 11 scales assessing various components of career development were used. Second, both cognitive and behavioral components of career development were assessed. Third, longitudinal data from four high schools

were analyzed in conjunction with cross-sectional data from three nationally representative samples. Fourth, the study design controlled for the effects of systematic career guidance programs, career education programs, and related interventions on the normal rate of career development.

Procedure

Sample

Four high schools representing various geographic locations and community sizes were involved in the longitudinal phase of the study. All schools administered the Assessment of Career Development (ACD) (American College Testing Program, 1974) to 9th graders in the spring of 1973. These students were retested at a one-year interval and/or a three-year interval. Entire classes were tested; the average percents of students who were present and who completed the ACD in grades 9, 10, and 12 were 96 percent, 86 percent, and 85 percent, respectively. Table 1 indicates school location, community type, grade at testing, and number of students tested and retested.

Table 1 about here

In addition to data for the four schools in the longitudinal phase of the study, cross-sectional data from nationally representative samples of 8th, 9th, and 11th graders were also analyzed. These ACD norm group students (N = 28,298) came from 200 schools in 33 states. Stratification variables included region of the country, size and socioeconomic status of community, and size of school (American College Testing Program, 1974).

Instrumentation

The ACD, which was developed from detailed content specifications drawn from career development theory and guidance practice, is based on the viewpoint that career development is primarily an educational concern involving the assessment of achievement. In the ACD, level of achievement is defined

by amount of knowledge in various career-related areas and number of career-related experiences of various kinds. The following ACD scales were used: Knowledge of Occupational Characteristics (54 items), Knowledge of Occupational Preparation Requirements (18 items), Career Planning Knowledge (40 items), Career Planning Involvement (30 items), Exploratory Occupational Experiences--six scales, one for each of six job clusters (15 items each), and Summary of Exploratory Occupational Experiences (90 items). These scales were selected for the study because they assess major components of career development that should exhibit growth over time. The Career Planning Involvement Scale and the Exploratory Occupational Experiences Scales provide behavioral indicators of career development seldom included in growth studies.

ACD scale reliabilities (i.e., internal consistency and split half) were based on a 10 percent sample of the ACD norm group. Reliability estimates range from .63 and .61 (Knowledge of Occupational Preparation Requirements) to .83 and .92 (Summary of Exploratory Occupational Experiences) for 8th graders and 11th graders, respectively. Complete reliability information and other psychometric data are reported in the ACD Handbook.

Design

A major, though seldom-considered, concern in studies of career development is the possibility that irrelevant factors may affect assessment of the normal rate of development. However, it is not clear whether or how various factors should be taken into account. For example, should longitudinal studies of career development deliberately seek to avoid the effects of school guidance programs on students? If so, the ideal study would be conducted with students who have had no school-based exposure to career guidance activities or career planning concepts. Although career guidance is generally neglected in this country (Prediger, Roth, & Noeth, 1974), it would be difficult to identify a sizeable

group of such students. It would be equally difficult to maintain "uncontamination" as the study progressed through several years of repeated testing. Indeed, the very experience of responding to the questions on the instrument used to assess development could influence a student's career development. Repeated use of the same instrument could also result in the practice effects frequently found in test-retest studies. Use of alternate forms of the same instrument decreases this likelihood but introduces problems related to equivalency of forms.

In light of the various factors that may influence the results of growth studies such as this, the following steps were taken. First, only schools that did not have systematic career guidance or career education programs were included in the longitudinal phase of the study. These schools all required students with educational/vocational concerns to seek out a counselor. As verified by statements from guidance personnel in each school, no special career guidance activities or classes were offered. Second, to minimize the possibility of practice effects, students at two of the schools were retested three years after initial testing. Finally, cross-sectional data for nationally representative samples of 8th, 9th, and 11th graders were analyzed for perspective. Because students in the cross-sectional sample took the ACD only once, prior experience with the ACD could not have affected their results; nor are practice effects involved. Although the grade 11 sample does not include students who dropped out of school, any effects of differential dropout rates on study results should not be reflected in the growth data for the 8th and 9th grade samples. Relatively few students in these grades drop out of school.

Analyses

The four high schools in the longitudinal phase of the study were allocated to two groups based on the interval between ACD testing and retesting. This grouping procedure increased the size of analysis samples,

thus permitting a more precise analysis of career development. Group 1 consisted of schools A and D since both retested 9th graders as 10th graders. Schools B, C, and D formed Group 2; all three schools retested their 9th graders when they reached 12th grade. Group 3 consisted of the 8th, 9th, and 11th grade national, cross-sectional samples.

School D was included in Groups 1 and 2 because testing was conducted in grades 9, 10, and 12. The grade 9 and 10 testing directly corresponds to the testing in School A, the other school in Group 1. Although schools B and C in Group 2 did not test in grade 10, the grade 10 testing in School D should have had little if any affect on grade 12 scores because of the considerable length of time (i.e., 2 years) between testings. Finally, complete independence of the samples comprising Group 1 and 2 is not crucial to the determination of trends in career development.

One-tailed t-tests were used to examine differences in scale means over time. Only students who had a score on a given scale for each testing and retesting (e.g., students from school D with scores on the Career Planning Involvement Scale for 9th, 10th, and 12th grade) were included in the analyses for that particular scale.

Results

The Knowledge of Occupational Characteristics, Knowledge of Occupational Preparation Requirements, Career Planning Knowledge, and Career Planning Involvement Scales showed statistically significant increases ($p < .01$) for all time interval comparisons for all three analyses groups. Figures 1, 2, 3, and 4 summarize these trends for the Career Planning Knowledge, Career Planning Involvement, Knowledge of Occupational Preparation Requirements, and Knowledge of Occupational Characteristics Scales respectively. To provide a

common basis for comparison across groups, the growth scales in the figures are anchored to the mean and standard deviation for the Group 3 national sample of 9th graders. Thus score levels for all three groups at each grade are expressed in terms of z-scores based on the 9th grade data.

Figures 1, 2, 3 and 4 about here

Results for selected items on the Career Planning Knowledge Scale and Career Planning Involvement Scale are summarized in Tables 2 and 3 to illustrate scale content and to provide concrete evidence of level of student performance on these scales. Specific response distributions for students in the 11th grade cross-sectional sample have been reported by Noeth, Roth, and Prediger (1975) for males, females, and the total sample. Elsewhere (Noeth et al., 1975; Prediger et al., 1974) level of performance has been judged to be woefully inadequate. However, readers must reach their own conclusions.

Tables 2 and 3 about here

The Summary of Exploratory Occupational Experiences Scale showed significant ($p < .01$) increases for Groups 1 and 2. Statistically significant increases were also found for three of the separate Exploratory Occupational Experiences Scales, the Business Detail (Groups 1, 2, and 3), Business Contact (Groups 1 and 2), and Technical (Group 3) Scales.

Discussion

This study provides further evidence that career development systematically increases with age over the high school years. Results for the five scales on which growth was observed suggest that students become more knowledgeable about job duties, psychosocial aspects of work, worker attributes, and the amounts and types of training/education usually associated with various occupations (Knowledge of Occupational Characteristics and Knowledge of

Occupational Preparation Requirements Scales). The results also indicate that students become more knowledgeable about the career planning process, seek more information, take part in more self/career exploration activities, and better focus their exploratory behaviors on occupational preferences (Career Planning Knowledge, Career Planning Involvement, and Summary of Exploratory Occupational Experiences Scales). These trends appear to be a function of what can be termed normal growth.

Career-related knowledge (as measured by scales assessing knowledge of the world of work, of the career planning process, etc.) is generally considered to be a major component of career development. The results of this study indicate that career planning involvement is also a major component. Students showed significant increases on the ACD Career Planning Involvement Scale from grades 8 to 12. The items shown in Table 2 reflect the active self/career exploration orientation of this scale. In addition, significant trends across grades 9 to 12 were found for the Summary of Exploratory Occupational Experiences Scale. It is important to note, however, that these involvement and experience scales have very low correlations (ranging from .02 to .12) with the ACD knowledge scales (American College Testing Program, 1974). (These correlations are based on the national data for 9th and 11th graders in Group 3.) In addition, level of group performance varies for the two components. For example, Figures 1 and 2 show that, although Group 1 obtained the highest and Group 3 obtained the lowest score on the Career Planning Knowledge Scale, their rankings on the Career Planning Involvement Scale were reversed. These results, together with the low correlations cited above, suggest that the knowledge and behavioral components of career development are relatively independent. Thus, with respect to career planning, knowing is not necessarily accompanied by doing.

Implications

Study results appear to have important implications for practicing counselors. For although career-related knowledge and involvement both exhibit growth during the adolescent years, the data indicate that they are relatively independent components of career development. Counselors, then, need to emphasize both knowledge and behavioral aspects in their day-to-day individual and programmatic efforts if they wish to improve upon students' normal, minimal career development growth. Promoting knowledge (or awareness), which often seems to be the focus of many career education and career guidance programs, does not necessarily result in more career planning involvement on the part of students. Thus it is not sufficient to simply provide career information (e.g., occupational descriptions, labor-market data, principles of career decision-making, etc.) Counselors must also actively involve students in the career planning process along the lines suggested by the activities listed in Table 2. By making students aware of career-related information, by facilitating use of this information, and by encouraging participation in career planning activities, counselors can be more certain that career planning knowledge is accompanied by career planning involvement. Both appear to be important, though independent, aspects of career development.

The results of this study also have implications for further research on career development. The major implication concerns the need to examine growth in two components of career development, knowledge and involvement. Further research might also include the design features of this study; e.g., long test-retest intervals, control for contamination effects, and cross-checking of results obtained from longitudinal and cross-sectional samples. Valuable information on growth in the career development of adolescents should result.

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Table 1

Growth Study Schools and Sample Sizes

School	Location	Community	Grade 9		Grade 10			Grade 12		
			Total N	Tested	Total N	Tested	Matched[a]	Total N	Tested	Matched[a]
A	Northeast	Suburb	340	322	320	291	250			
B	Midwest	Small city	130	124				100	74	69
C	West	Suburb	146	140				120	116	100
D	West	Small city	175	171	160	123	109	110	91	76[b]

Note: For all testing and retesting, entire grades were used. Dropouts, family moves, and absences affected matched sample sizes.

[a]The numbers shown refer to those students who took the ACD first in 1973 and again during the retesting. Records were matched for those students who constituted the participants in the study.

[b]These 76 students had taken the ACD three times: as 9th graders, as 10th graders, and as 12th graders.

Table 2

Response Percentages for Items Selected from the Career Planning Involvement Scale

Items	Group 1		Group 2		Group 3		
	GR9	GR10	GR9	GR12	GR8	GR9	GR11
Activities related to students' first two occupational choices							
1. Discussed the jobs with a parent, relative, or guardian	84	89	81	93	84	85	91
2. Talked with workers in the jobs about how they came to be in the job	48	55	45	73	50	49	59
3. Talked with a counselor or teacher about how my goals, interests, and abilities relate to the jobs	29	41	31	69	36	43	58
Activities related to career plans in general							
4. Discussed in class jobs related to the subject we were studying	64	60	70	75	67	82	78
5. Took a course in school that studied several different types of jobs	19	28	25	42	24	32	32
6. Read a job description from the school library or guidance office job files	38	41	46	71	39	48	60

Table 2 (continued)

Items	Group 1		Group 2		Group 3		
	GR9	GR10	GR9	GR12	GR8	GR9	GR11
7. Took a tour through a local industry, business, hospital, or office to observe what the various jobs were like	67	69	56	67	66	63	58
8. Attended a job fair or career day where workers or employers talked about jobs	17	23	22	84	20	22	35
9. Took part in an actual or practice job interview	14	26	19	50	35	26	45

Note. Percentages combine results for item responses indicating that (a) students have either done this activity once or twice or (b) they have done it several times.

Table 3

Response Percentages for Items Selected from the Career Planning Knowledge Scale

Items	Group 1		Group 2		Group 3		
	GR9	GR10	GR9	GR12	GR8	GR9	GR11
Common misconception items							
1. Most people do not need to begin career planning until their final year in high school (F)	90	90	91	86	81	86	85
2. The earlier one chooses his or her life's work the better (F)	33	39	27	26	35	34	39
3. Most persons remain in the same job throughout their lives (F)	34	37	30	50	34	36	39
4. Few women work outside of the home after marriage (F)	64	77	57	69	59	61	70
5. Less than one-third of all job openings require a college degree (T)	42	43	51	53	49	46	47
6. Most people have the ability to do well in any job if they set their minds to it (F)	30	34	23	27	24	27	30
7. There is only one right job for a person in terms of his or her abilities (F)	75	76	67	75	71	74	83

Table 3 (continued)

Items	Group 1		Group 2		Group 3		
	GR9	GR10	GR9	GR12	GR8	GR9	GR11
Additional true/false items							
8. The unemployment rate of 20-year-olds in the labor market is usually less than the rate for other adults (F)	52	54	50	56	52	52	57
9. The State Employment Service Office provides free information about job openings and job training programs (T)	93	93	91	93	90	92	95
10. Apprentices are paid while they learn (T)	62	77	67	85	59	66	82
11. The English and math skills of freshmen are about the same from one college to another (F)	58	52	50	32	52	53	48

Note. Percentages refer to correct responses for true/false (T/F) items. Responses keyed as correct are shown in parentheses following each item.

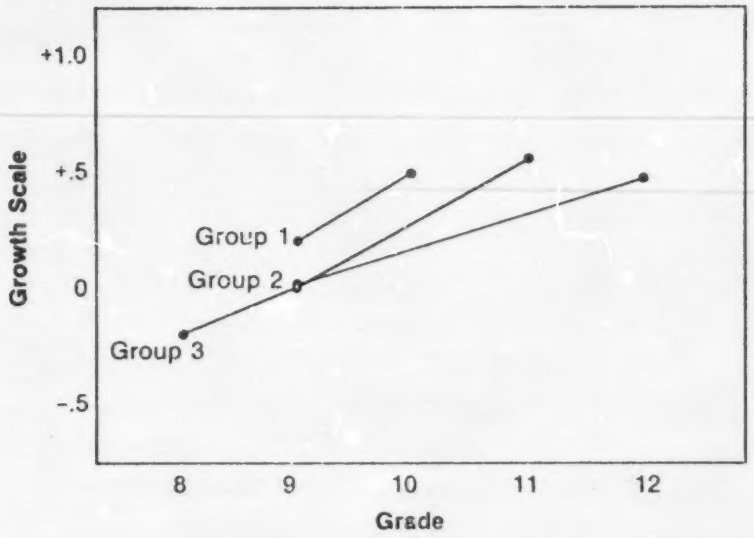

Figure 1. Growth trends for career planning knowledge.

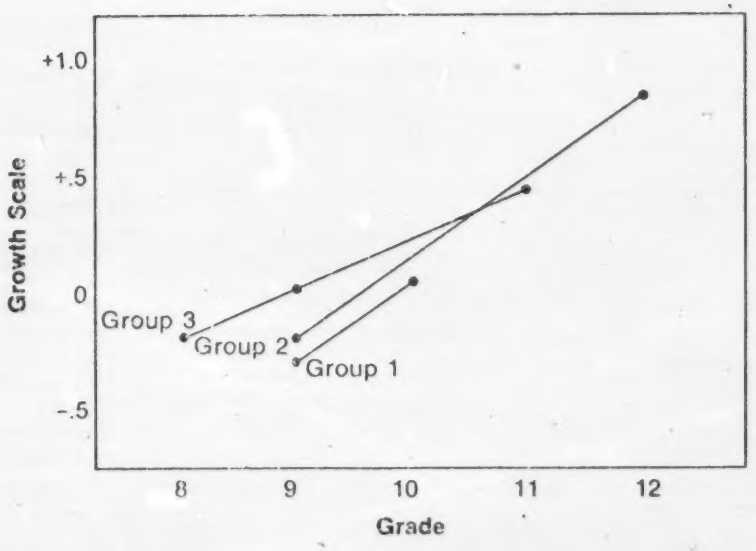

Figure 2. Growth trends for career planning involvement.

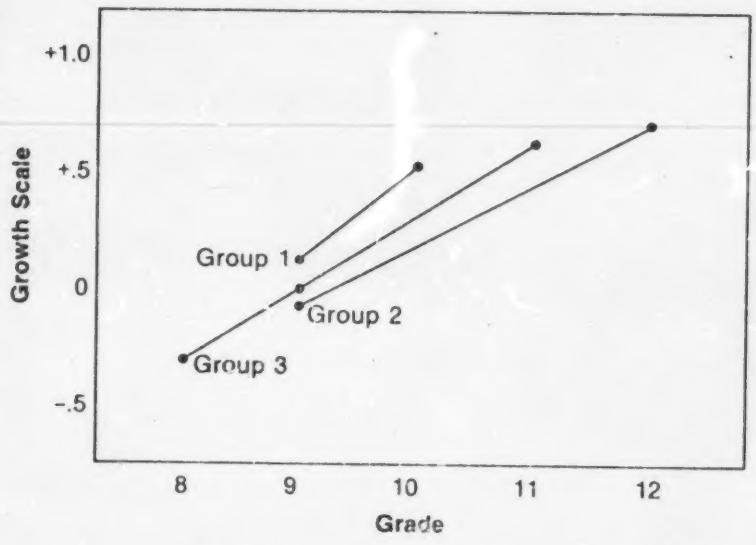

Figure 3. Growth trends for knowledge of occupational preparation requirements.

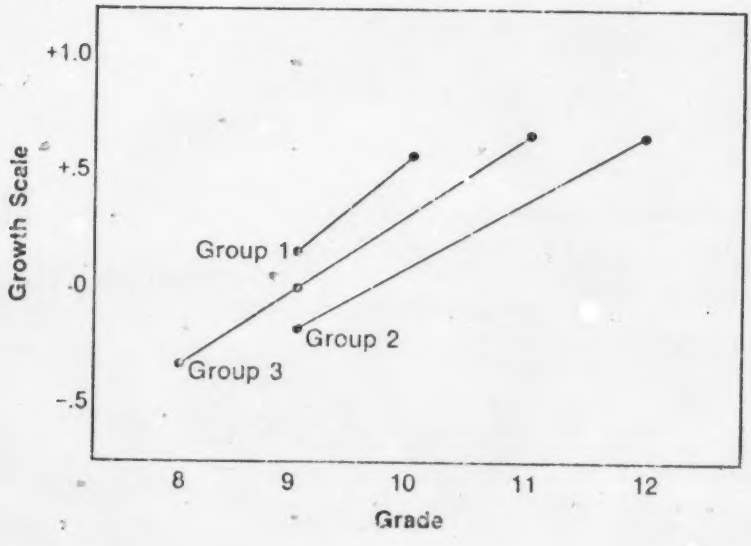

Figure 4. Growth trends for knowledge of occupational characteristics.